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VERAGES

## TOMATO JUICE

The commercial preparation of tomato juice has been carried on largely at tomato canning factories, where large amounts of raw materials and machinery are available. The manufacture of tomato juice has grown rapidly in the past few years and the future will depend largely upon the maintenance of a high quality product. This new food product is a rich source of vitamins A, B, and C, and during the manufacture care should be used that they are not destroyed. Vitamin C is particularly susceptible to destruction by oxygen, so that the processes of manufacture should be so arranged as to expose the juice to the air as little as possible, and to handle the materials as rapidly as possible.

The raw tomatoes are selected carefully for maturity and soundness, all spoiled or green portions being discarded. Where juice is prepared in conjunction with tomato canning, the sound but small or odd-shaped fruit does very well for the manufacture of the juice. The tomatoes should be well washed, sorted and trimmed, and then scalded by dipping momentarily in boiling water. This scald or preheat is important to the yield and quality of the juice.

Machines for extracting the juice from the scalded tomatoes are available from machinery manufacturers. This equipment is designed to avoid whipping air into the juice, in order to preserve vitamin C content. Salt is generally added, the amount varying from 4 to 6 pounds per 100 gallons of juice.

The juice may be preheated to about 145° F. to aid in processing and to produce a vacuum in the containers. It is filled while hot into tin or glass containers. There are enclosed partial lists of manufacturers of these containers, any one of whom will advise you as to the type best suited to your needs. When the juice has been filled into the containers at 145° F., the following processes in boiling water at 212° F. or in flowing steam should be used:

No. 1 cans	15 minutes at 212° F.
No. 2 cans	20 minutes at 212° F.
No. 10 cans	30 minutes at 212° F.

The hot containers should be cooled in water in order to avoid excessive cooking and stored in a cool dry place. Glass containers should be filled at 180° F. and heated in a water bath at 170° F., 8 ounce containers for 20 minutes and 32 ounce containers for 35 minutes.

It is advisable not to filter off the pulp which is in suspension. On storage, this pulp may settle to the bottom of the container, but this in no way affects its food value or palatability.

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A number of interesting articles on the manufacture of tomato juice have been published in trade journals, discussing various phases of its preparation and preservation. The following, any of which may be consulted in comprehensive public or technical libraries, may be useful to you:

Essential factors in the preparation of tomato juice,  
J. Gaub,  
The Canner, Vol. 67, October 13, 1928.

G. C. A.'s Recent tests on tomato juice,  
Karl L. Ford,  
The Glass Container, Vol. 9, pp. 5-7, August, 1930.

Tomato Juice,  
A. W. Bitting,  
The Canner, Vol. 71, p. 25, Sept. 27, 1930.

Tomato Juice cocktail in glass newest popular beverage,  
C. P. Lathrop,  
The Canner, Vol. 72, pp. 35-37, Jan. 17, 1931.

Tomato Juice Manufacture,  
R. H. Winters,  
The Glass Packer, Vol. 4, pp. 69-71, February, 1931.

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GA 63  
286.83  
C.165

Tomato juice and tomato pulp,  
C. H. Campbell,  
Canning Age, Vol. 12, pp. 113-118, February, 1931.

Tomato juice and cocktail; A Symposium,  
The Glass Packer, Vol. 4, pp. 163-186, April, 1931.

Vitamins and tomato juice,  
E. F. Kohman,  
The Canner, Vol. 72, pp. 15-17, May 30, 1931.

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Vacuum method for tomato juice,  
Rollins L. Dee,  
Western Canner & Packer, Vol. 23, pp. 15-16, October, 1931.

Standardized quality is what the tomato juice industry needs most,  
R. H. Winters,  
The Glass Packer, Vol. 11, pp. 161-2, March, 1932.

page 15-16  
(carbonated  
tomato juice)  
pasteurized at 180° +

{ in Chem Abstracts  
Vol. 24, 5080

not important

{ good  
also  
cocktail

discusses tomato  
juice in bread  
and crackers

Canning Age in Patent Office Library TX  
599

There is also enclosed a partial list of trade journals which frequently contain articles on the commercial manufacture of tomato juice, some of which have been referred to above. These journals can be consulted in the libraries above mentioned, or purchased from the publishers at the prices indicated.

If the product is to be shipped in interstate commerce, it is suggested that a letter be written to the Food and Drug Administration, U. S. Department of Agriculture, Washington, D. C., requesting copies of laws and regulations applying thereto.

Attached:

- Mimoo. list glass container mfrs.
- " " tin can mfrs.
- " " trade journals
- " " canning mfrs.

FOOD RESEARCH DIVISION  
Bureau of Chemistry and Soils  
U. S. Department of Agriculture  
Washington, D. C.  
*Printed on Government Stationery*

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6-18-30

PARTIAL LIST OF MANUFACTURERS OF GLASS CONTAINERS.

Illinois Glass Company,  
Alton, Illinois.

Owens Bottle Company,  
Toledo, Ohio.

Vacuum Seal Company, Inc.,  
154 Nassau Street,  
New York, N. Y.

American Bottle Company,  
Toledo, Ohio.

Capstan Glass Company,  
Connellsville, Pa.

Hygeia Glass Corporation,  
Lancaster, N. Y.

Turner Glass Company,  
Terre Haute, Indiana.

Hazel-Atlas Glass Company,  
Wheeling, West Virginia.

The manufacturers listed above are not endorsed  
or recommended over others dealing in similar supplies,  
but whose names are not mentioned.

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PARTIAL LIST OF TIN CAN MANUFACTURERS

American Can Company,  
104 S. Michigan Blvd.,  
Chicago, Illinois.

Continental Can Company,  
New York; 100 East 42nd. St.,  
and  
Chicago, Ill., West Washington St.

The Heekin Can Company,  
New Sixth & Culvert Sts.,  
Cincinnati, Ohio.

Phelps Can Company,  
Fulton Ave. & Eagle,  
Baltimore, Maryland.

Wheeling Can Company,  
Wheeling, West Virginia.

Note: In giving these names, no guaranty is implied nor should it be inferred that the products of these firms are recommended in any way over those whose names are not listed.

MLD

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PARTIAL LIST OF TRADE JOURNALS DEVOTED TO CANNING

The Canner, Canner Publishing Company, 140 North Dearborn Street, Chicago Ill. Subscription rate: Domestic, \$3.00; foreign, \$5.00; single copies, 15 cents; back numbers, 25 cents. Weekly.

Canning Ago, 101 West Thirty-first Street, New York, N. Y. Subscription rate; Domestic, \$4.00; foreign, \$5.00; single copies, 35 cents. Monthly.

Canning Trade, Trade Company, Publishers, 107 So. Frederick St., Baltimore, Maryland, Subscription rate; Domestic, \$3.00; Canada, \$4.00; Foreign, \$5.00. Weekly.

Western Canner and Packer, 422 Montgomery Street, San Francisco, California. Subscription rate; Domestic, \$4.00; foreign, \$5.00; single copies, 35 cents. Monthly.

The following journals frequently contain articles on canning:

\*Fruit Products Journal and American Vinegar Industry, Avi Publishing Company, New York, N. Y. Subscription rate: Domestic, \$2.00: foreign, \$3.50: single copies, 25 cents. Monthly.

Food Industries, McGraw-Hill Publishing Company, Inc., New York, N. Y. Subscription rate: Domestic, \$2.00; foreign, \$3.00; single copy 20 cents. Monthly.

Glass Packer, Ogden Watney Publishers, Inc., 117 Liberty Street, New York, N. Y. Subscription rate: Domestic, \$2.00; foreign \$3.00; single copies 25 cents. Monthly.

The Glass Container, Glass Container Association of America ,19 West 44th Street, New York, N. Y. Subscription rate, \$1.50 yearly.

\*Contain directories for machinery and supplies.

Note.- The publications listed above are not endorsed or recommended over others dealing with the same subject but which are not mentioned.

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PARTIAL LIST OF CANNING MACHINERY MANUFACTURERS.

Max Ama Machine Co., New York, N. Y.  
Anderson-Barngrover Mfg. Co., San Jose, California.  
Anderson Filling Machine Co., Alameda, Calif.  
Angelus Sanitary Can Machine Co., Los Angeles, Calif.  
Ayars Machine Company, Salem, N. J.  
Berlin Canning Machinery Works, Berlin, Wis.  
E. W. Bliss Co., Brooklyn, N. Y.  
Chain Belt Company, Milwaukee, Wisconsin.  
Chisolm-Scott Co., Columbus, Ohio.  
Coons Manufacturing Co., Rochester, N. Y.  
Dunkley Company, Kalamazoo, Mich. (Mfr. cherry pitters)  
Frank Hamachek Machine Co., Kewaunee, Wis.  
Hansen Canning Machinery Corporation, Cedarburg, Wis.  
Huntley Mfg. Co., Silver Creek, N. Y.  
Invincible Grain Cleaner Co., Silver Creek, N. Y.  
Jeffrey Manufacturing Co., Columbus, Ohio.  
Karl Kiefer Machine Co., Cincinnati, Ohio.  
F. H. Langenkamp, Indianapolis, Ind.  
Link-Belt Co., Chicago, Ill.  
Morral Brothers, Morral, Ohio.  
Peerless Husker Co., Buffalo, N. Y.  
The Pfaudeler Co., Rochester, N. Y.  
S. O. Randall's Son, Baltimore, Md.  
A. K. Robbins & Co., Baltimore, Md.  
Sheboygan Machine Co., Sheboygan, Wis.  
Sinclair-Scott Co., Baltimore, Md.  
Sprague-Sells Corporation, Chicago, Ill.  
Taylor Instrument Companies, Rochester, N. Y.  
The United Company, Westminster, Md.  
Wm. E. Urschel, Valparaiso, Ind.  
Zastrow Machine Co., Baltimore, Md.  
Klotz Machine Co., Sandusky, O. (Mfr. grape stemmer and crushing  
machine)

In giving these names no guaranty is expressed or implied  
nor is it to be inferred that they are recommended over others  
whose names are not mentioned.

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